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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/471,100	12/21/1999	KNUT S. GRIMSRUD	10559/111001	7001

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EXAMINER

ELMORE, STEPHEN C

ART UNIT PAPER NUMBER

2186

DATE MAILED: 03/29/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/471,100

Applicant(s)

GRIMSRUD, KNUT S.

Examiner

Stephen C. Elmore

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 21 December 1999.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 7, 8, 11, 12, 19, 20, 23, 24, 29 and 30 is/are allowed.
- 6) ☒ Claim(s) 1, 9, 10, 13-18, 21, 22 and 25-28 is/are rejected.
- 7) ☒ Claim(s) 2-6 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 December 1999 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

### **DETAILED ACTION**

1. Claims 1-30 are presented for examination.

#### ***Drawings***

2. The drawings are objected to under 37 CFR 1.83(a).

The drawings must show every feature of the invention specified in the claims.

Therefore, the following features must be shown or the feature(s) canceled from the claim(s).

No new matter should be entered.

- a. claims 6, 9, 10, 18, 21, 22, -- “third location” is not shown;
- b. claims 11 and 13-24 -- “computer program” is not shown;
- c. claims 2, 3, 4, 14, 15, 16, 26, 27 -- “the database” and “the database comprises...” are not shown;
- d. claims 18, 19, 21, 23, 24, 25, 26, 27, 29 -- “instructions” are not shown;
- e. claims 1, 5, 13, 17, 25 -- “predetermined portion of the data” is not shown; and,
- f. claims 4 and 16 -- “scatter/gather list” is not shown.

3. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

#### ***Claim Objections***

4. Claim 6 is objected to under 37 CFR 1.75(c) as being in improper dependent form - since the claim cannot depend from itself.

#### ***Specification***

5. The disclosure is objected to because of the following informalities:

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- a. the specification, page 3, lines 14 and 16 -- drawing reference character "27" should be "26";
- b. the specification, page 5, lines 7-20 -- is not clear about the relationship between the frequency at which the scatter/gather list is consulted and the boundary between the demand and prefetch data, specifically, the sentence...

"However, the frequency is such that DMA engine 16 consults scatter/gather list 26 at (or substantially near) a boundary between the demand and prefetch data (as that data is read)."

appears to state that the DMA engine consults a list at a boundary, which concept is unclear;

- c. the specification is not clear as to what is scope of the host processing device, see for example, page 6, lines 14-15, is the "host processing device" equivalent to the main CPU of a computer system?, or is it equivalent to the processor of a disk drive controller?;
- d. the specification, page 7, lines 7-10 -- what is meant by "prior point relative to the demand data on hard disk 12"?
- e. the specification, page 7, lines 11-13 -- this sentence is not grammatically correct English;
- f. specification, page 7, lines 22-23 -- this sentence is missing a verb;
- g. specification, page 8, line 2 -- what data is "the data" referring to?

Appropriate correction is required.

*Claim Rejections - 35 USC § 112*

6. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

7. Claims 9, 10, 18, 21 and 22 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for the scope of the method (or computer program embodiment of) of reading data from a first and second location on a storage medium in response to a command, does not reasonably provide enablement for reading data from a first, a second and a third location on a storage medium in response to a command. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and or use the invention commensurate in scope with these claims. There is no teaching in the specification for reading more than two locations on a storage medium in response to one command, note, for example, page 7, lines 22-23 "Thus, a single command can be used to (read) both prefetch and demand data." There is no teaching of reading three locations in response to one command.

8. Claims 13-18 and 25-28 are rejected under 35 U.S.C. 112, first paragraph, because the specification (as to claims 13 and 25), while being enabling for the feature of issuing an interrupt upon the event of the DMA engine encountering an entry in the scatter/gather list, does not reasonably provide enablement for issuing an interrupt after a predetermined portion of the data has been stored in memory. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and or use the invention commensurate in scope with these claims. In the specification, there is only found: the teaching of an interrupt being issued upon the processing of a scatter/gather list entry, such as a flag, signaling the boundary between the demand and prefetch data, there is nothing taught pertaining to an interrupt under any other conditions. Claims 14-18 and 26-28 inherit the deficiencies of the independent claim from which they depend.

***Claim Rejections - 35 USC § 102***

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

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A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

10. Claims 1, 13 and 25 are rejected under 35 U.S.C. 102(b) as being anticipated by Parks et al., USPN 5,473,761.

Parks teaches the claimed apparatus and method of reading data from a storage medium, and computer program that cause a computer to perform the method (claims 1, 13, and 25) comprising:

claim 1:

reading data on the storage medium in response to a command is taught as the read portion of the servicing of an I/O request from the Host, col. 20, line 63, (also see col. 20, line 46- col. 22, line 22), and storing the data in a region of memory is taught, as putting the read data in the allocated buffer memory, col. 2, lines 6-7, and teaches issuing an interrupt after a predetermined portion of the data has been stored in memory is taught as “when the disk drives complete the read...it issues an interrupt,” col. 22, lines 5-7;

claims 13 and 25:

Parks teaches the above method as claimed by claims 13 and the claimed apparatus as claimed by 25 because the above method is being performed by the apparatus of a processor executing instructions which accomplish the read, store, and interrupt activities.

***Allowable Subject Matter***

11. Claims 7, 8, 11, 12, 19, 20, 23, 24, 29, 30 are allowed over the prior art of record.

12. Claims 2-5 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

13. Claims 9, 10, 21 and 22 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action.

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14. Claims 14-17 and 26-28 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

***Conclusion***

15. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Stephen C. Elmore whose telephone number is (703) 308-6256. The examiner can normally be reached on Mon-Fri from 7:30-4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matt M. Kim can be reached on (703) 305-3821. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 746-7239 for regular communications and (703) 746-7238 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-3900.



Stephen Elmore  
Examiner  
Art Unit 2186  
March 24, 2002

**Kevin L. Ellis**  
**Primary Examiner**

